Statewide Edition

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ALL AROUND ALASKA

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THREE-MONTH PROJECT UNDERWAY *--- In May the Air Force began treating approximately 5,700 cubic yards of soil at a former fuel storage area near Cold Bay, Alaska. Thermal treatment of the soil, that contains components of diesel fuel, will clean the soil by breaking down the fuel into mostly heat, carbon dioxide, and water. Investigative work was conducted around portions of the former fuel distribution system, to determine the exact location of soil that must removed and treated. After all site investigative work is completed, soil will be removed and treated. The thermal treatment unit is shown in the upper left of the photo. A stockpile of untreated soil is shown just below the treatment unit. The stockpile is covered to prevent exposure to rain that may cause migration of fuel compounds from the soil. After soil is treated and laboratory analysis confirms the treated soil is clean, soil will be placed back in the excavation. The Air Force will then monitor the groundwater to ensure protection of human health and the environment.* *See page 9 for more information on Cold Bay.*
(Photo by Scott Tarbox, USAF)

Air Force Tackles Drum Removal At Indian Mountain

The Air Force focused its efforts on removal of drums at Indian Mountain during the summer 2002 field season. In February 2001, a representative of the Alaska Department of Environmental Conservation (ADEC) reported to the U.S. Air Force that numerous drums of unknown product, possibly Contaminants of Concern (COC), existed at various Indian Mountain Long Range Radar Site (LRRS) lower camp sites. These drums were found within three Installation Restoration Program sites designated LF05, LF06, and SS02.

Many of the drums were discovered to lie within areas with potential for stream flooding during spring "breakup" and runoff. Because of the potential for a release from these drums during flooding this spring, the Air Force conducted a time-critical removal of all drums and any contents in these three areas. Removal of soil in the vicinity of drums was planned but not completed because the scale of the effort became too large for the time and equipment available. This was an interim action and is not intended to be a complete cleanup of contamination at the site. Soil removal may occur within the next few years. Final remedies for the sites will be selected via the development of proposed plans and decision documents.

Pile of drums near Indian Creek that were removed in 2002.

A worker uses an ATV four-wheeler to remove a barrel at Indian Mountain.

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (Public Law 96-510) Section 104(a)(1) describes time critical removals. These are actions that can be planned in less than 6 months and have the following characteristics:

- A release or threat of release requires near-term action.
- The required response is fairly obvious and straightforward.
- Temporary or final waste management capacity is available.

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) also provides a basis for early action. This action was conducted as a time-critical removal.

In May 2002, the Air Force's 611th Civil Engineer Squadron Environmental Operations Section (611 CES/CEVO) completed a work plan for time-critical interim removal activities at the Indian Mountain LRRS. The work plan describes in detail, the drum removal, soil excavation, and sampling procedures

that were planned for the site. The primary purpose of this action was to remove a potential environmental risk by removal/excavation and disposal of more than 275 drums and associated soil with possible POL (petroleum, oils, lubricants) contamination.

Remediation activities conducted during 2002 consisted of drum removal, cleaning and disposal, post-removal sampling, and contaminated soil investigation. The results of the drum removal and disposal action activities were very favorable.

At Spill Site (SS02) 151 drums were removed at Landfill (LF06) 267 were removed, and at Landfill (LF05) 39 drums were removed. Thirty-one drums, mainly from the large pile in SS02, contained various petroleum products. These were consolidated into 27 drums, which were transported to the Defense Reutilization and Marketing Office (DRMO) at Elmendorf AFB, Alaska.

An excavator removes a pile of debris at Indian Mountain.

Mitch Linne, 611th Civil Engineer Squadron Operations Section conducts Petro Flag oil and soil sample analysis.

Three drums of solids from the bottom of various drums, 2 gallons lead based paint, 20 quarts of hydraulic oil, a 5-gallon can of automotive grease, a 5-gallon can of creosote, and chain lube were also shipped to DRMO. The total number of drums shipped was 37. All empty drums were de-headed, triple rinsed, crushed, and packed for shipment as scrap metal. Four empty 5-gallon cans, which had contained malathione at one time, were also cleaned and crushed. Rinse water from the drum washing was processed through a granulated activated-carbon filtering system, sampled and discharged. The sample contained no contaminants above regulatory limits.

At the end of the 2002 field season all drums had been removed from SS02. Most of these were lying on the surface of the slope of the creek embankment. Several drums containing petroleum products had leaked so that much of the soil below them is contaminated. Although no samples were taken from deeper than 6 inches at SS02, an estimated minimum of 30 cubic yards is contaminated and remains in place awaiting removal. This is a much larger amount then originally estimated. Much of the material

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Indian Mountain (continued)

consists of rock fragments greater than 2 inches in size. Material of this dimension is normally separated from the smaller fraction and replaced in the excavated area. Equipment and supplies were not available on site to screen and contain this amount of material. A large quantity of scrap metal debris was removed during drum removal and was placed in a pile for later removal.

At LF06 all drums lying on the surface and those partially buried were removed. A few drums, buried with only a small surface exposed, remain in place. Several of these were discovered in a berm on the downhill side of Landfill 4. Many more drums may be buried within this berm and the one in adjacent Landfill 3. These may pose a threat to the environment if they contain petroleum products. The number of buried drums is unknown. An electromagnetic survey may help to further identify the area within which the drums are likely to exist.

Pacific Air Forces approved the funding to continue this CERCLA Time Critical Removal in February 2003 and the 611th CES Environmental Restoration Section promptly began plans for this summer's follow-on project.

More than 450 drums were cleaned, crushed, packaged, and shipped off-site for disposal. Approximately 15 tons of metal debris was also shipped off-site for disposal in 2002.

Approximately 1,000 gallons of hazardous materials and waste was removed and shipped off-site from Indian Mountain LRRS in 2002.

USAF C-130s transported additional heavy equipment and project materials to Indian Mountain, in preparation for project startup.

A broad array of last summer's (2002) environmental sampling will be used as a baseline to identify the affected (contaminated) areas that require further action.

The 611th CES Environmental Operations Section (CEVO) has allocated numerous field technicians, and Project Foreman Mark Mobley for the entire Indian Mountain project this summer.

This planning measure should assure adequate personnel and resources to complete the pending project objectives by this September.

On May 17, 2003, the 611 CES/CEVO personnel arrived on-site at Indian Mountain LRRS to begin the remaining drum removal and soil mitigation.

The Alaska Department of Environmental Conservation (ADEC) approved the U.S. Air Force's request to continue this project under the present (existing) work plan, in order to complete the pending objectives. ADEC Project Manager, Patrice Buck, is scheduled to be on-site in early June for a project startup inspection, and again in September for project closure. The ADEC and the Air Force Remedial Project Manager met June 3 with tribal and community leaders from Hughes and presented an update and overview on the progress of Indian Mountain's environmental restoration.

IMPLEMENTATION OF CLEAN SWEEP PROGRAM AT BIG MOUNTAIN

Big Mountain RRS top camp.

Debris at Big Mountain RRS lower camp.

The Air Force's Clean Sweep program, consisting of building demolition and environmental cleanup, will be in full swing at Big Mountain Radio Relay Station (RRS) beginning this summer. The Clean Sweep program at Big Mountain RRS will be accomplished in two phases. The Phase 1 Clean Sweep effort started in June 2003, and will continue for approximately 60 days. Phase 2 activities will be accomplished in the 2004 field season.

Big Mountain RRS is an abandoned Air Force facility located about 220 miles southwest of Anchorage.

The Clean Sweep program at Big Mountain will remove remaining structures and debris left on site, and remedy any environmental impacts to the property as a result of previous Air Force activities.

continued on page 6 →

Big Mountain (continued from page 5)

The main purpose of Phase 1 is to prepare the site for the bulk of the demolition and removal activities scheduled during Phase 2. Highlights of 2003 Phase 1 activities include:

- Repair of the existing runway so that it can be used for transport aircraft.
- Repair the existing roadways so that demolition equipment and demolition debris can be safely transported.
- Removal of all regulated asbestos containing material (RACM) from existing site structures.
- Removal of hazardous wastes and regulated materials.
- Contents of aboveground fuel storage tanks at both Upper and Lower Camp areas will be removed (with physical removal of tanks to be completed in 2004).
- Initiate cleanup of petroleum contaminated soils at the Upper Camp tank area (to be completed in 2004).
- Construct a permitted landfill on site for disposal of inert demolition and construction debris.

The Phase 2 effort in 2004 will include demolition and removal of all buildings and structures, soil investigation and remediation, placement of demolition and construction debris at the landfill, and final removal and off site disposal of all remaining hazardous and regulated wastes.

The Big Mountain RRS was constructed in 1956 as part of the White Alice Communication System (WACS), which was established across Alaska during the Cold War. Later advancements in communication technologies made this mission obsolete, and the Air Force abandoned the installation in April 1979, leaving most of the equipment and structures in place at that time.

Since 1979, installation facilities have fallen into disrepair. The Clean Sweep program was initiated at Big Mountain in 1999 in an effort to cleanup and restore the property.

The Air Force currently owns about 400 acres of property at Big Mountain RRS. Property parcels are mainly divided between the Upper and Lower Camp areas and the intervening roadways, including the road that leads from the Lower Camp to the barge landing site at Reindeer Bay.

Iliamna Lake Contractors (ILC) has been selected as the prime contractor for both phases of Clean Sweep activities at Big Mountain RRS. ILC is a licensed and bonded construction company owned by the Iguigig Tribal Council. The award of this project to ILC will create economic opportunity in the region.

The Air Force conducted two public meetings June 4, 2003 in Kakhonak and Iliamna to inform the tribes and the public on the Big Mountain RRS Clean Sweep project. The Air Force has worked with regulatory agencies and regional communities in planning for the Big Mountain Clean Sweep effort. Restoration activities will be subject to monitoring and a five-year review by ADEC, to evaluate the effectiveness of site clean up and determine if actions are protective of human health and the environment.

WAINWRIGHT SHORT RANGE RADAR SITE (SRRS)

By Larry Opperman
Remedial Project Manager

The last work accomplished at the Wainwright SRRS was a pipeline demolition and beach debris clean up in 2001 and 2002. A five-mile long aboveground pipeline was removed along with approximately 100 cubic yards of scrap metal debris from the shores of Wainwright Inlet adjacent to the radar site. Prior to the pipeline removal and debris clean up, a Remedial Investigation/Feasibility Study (RI/FS) was performed in 1995. Based on the RI/FS, only two sites had contamination levels warranting further clean up activities. Those two sites are SS04, Diesel Fuel Spills and SS07, Garage. These two sites will be further addressed under the Air Force Installation Restoration Program for environmental clean up.

Programmed work for Wainwright SRRS includes Clean Sweep building demolition and debris cleanup to occur in fiscal year 2008. Pending funding timelines, the fieldwork will likely begin in summer 2008 and completed in the summer of 2009. Environmental clean up as programmed in the Air Force IRP program will also occur during this timeframe. IRP sites to be addressed during this time include the two sites mentioned in paragraph one: S04, Diesel Fuel Spills and SS07, Garage. Proposed plans and records of decision will be developed most likely in fiscal year 2006 or 2007 prior to the planned demolition and clean up activities

The Restoration Advisory Board (RAB) continues to be an active board cooperating with the Air Force in discussions on projects that may occur at the radar site. The RAB community co-chair for many years was Mr. Raymond Aguvluk of the Native Village of Wainwright. A new community co-chair will be announced soon. The Air Force co-chair is Mr. Larry Opperman.

Wainwright SRRS programmed for demolition in 2008.

Beach debris cleaned up from the shores of Wainwright Inlet in 2001 and 2002.

Approximately 5-miles aboveground pipeline and barrel supports were demolished in 2001 and 2002.

POINT LAY LONG RANGE RADAR SITE (LRRS)

By Larry Opperman
Remedial Project Manager

The last work accomplished at the Pt Lay LRRS was a Preliminary Assessment/Site Investigation (PA/SI). The PA/SI fieldwork occurred in the summer of 2002 and addressed six areas of concern (AOC). Five of the AOCs are debris sites with one (SS10, Dock/Beachfront) requiring additional investigation under the Installation Restoration Program (IRP). Debris sites do not qualify as IRP sites under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and therefore do not follow standard IRP program timelines.

Programmed work for Point Lay includes Clean Sweep building demolition and debris cleanup to occur in fiscal year 2004. Pending funding timelines, the fieldwork will likely begin in summer 2004 and be completed in the summer of 2005. Environmental clean up as programmed in the Air Force IRP program will also occur during this timeframe. IRP sites to be addressed during this time include: LF01, Deactivated Landfill; SS06, Garage; SS07, Drainage Pathway From POL Tanks; SS08, Drum Burial Area; and AOC SS10, Dock Beachfront. Proposed plans and records of decision are currently in development and should be in place prior to starting clean up activities.

Radome and Module Train programmed for demolition in 2004.

Debris below LF01. LF01 is programmed for selective removal of landfill material

Air Force debris on tundra north of Point Lay.

COLD BAY SOIL TREATMENT (continued from front page)

TEST PIT EXCAVATION --- In 2003, at the location of a former fuel storage area near Cold Bay, the Air Force will be removing and treating soil that contains components of diesel fuel. The effort involves analyzing soil samples from different depths to determine the location and amount of soil that will later be removed and treated. An environmental scientist is obtaining a soil sample from the bucket of the excavator. Personnel observing the test pit excavation site include the Site Health and Safety Manager, the equipment operator from Ridge Contracting, and an environmental specialist with the Alaska Department of Environmental Conservation. (Photo by Scott Tarbox, USAF)

SOIL TREATMENT UNIT --- In Cold Bay, Contractor personnel assemble a thermal treatment unit that will treat soil containing components of diesel fuel. In the foreground, a scale is being prepared for use during treatment operations. The site is the location of a former fuel storage area near the City of Cold Bay at the end of the Alaska Peninsula.
(Photo by Scott Tarbox, USAF)

REMOVING SOIL --- An excavator digs a test pit at the former fuel storage area near Cold Bay. In 2003, the Air Force will be removing and treating soil that contains components of diesel fuel. Several test pits were excavated on the site. Soil samples were obtained from various depths within the test pits. Analysis of soil samples will help determine the location and amount of soil that will later be removed and treated.
(Photo by Scott Tarbox, USAF)

KING SALMON'S ENVIRONMENTAL RESTORATION PROGRAM IS ON TRACK

Since 1987 the Air Force has been cleaning up the environment at King Salmon under the Installation Restoration Program (IRP). The Air Force IRP is mirrored after the Environmental Protection Agency's CERCLA program, and enlists cooperation between the Air Force, regulatory agencies, and local residents though the King Salmon Restoration Advisory Board (RAB).

The IRP provides funding and procedures to discover and investigate potentially contaminated sites at Air Force installations, followed by remediation efforts and site cleanup. Most of the contaminants identified at King Salmon are associated with previous releases of petroleum fuel products as a result of years of historical use and handling basewide.

Highlights of Restoration Progress

Environmental site cleanup can be accomplished one of three ways:

1) Physical removal of contaminants from the environment;
2) Active remediation using a mechanized system designed to degrade and remove contaminants on site; and
3) The natural attenuation processes of Mother Nature over time.

It is not always feasible to accomplish site cleanup simply by removing contaminants from impacted soil or groundwater. In some cases, the Air Force uses risk-based cleanup goals and targeted strategies to attain them. The goal is to assure that site contaminants are not potentially harmful to human health or the environment. Public review and ADEC approval is required before risk-based cleanup strategies can be implemented.

Under the IRP, individual contaminated sites or fuel spills identified at King Salmon are grouped into larger areas called zones, which share common groundwater characteristics. For the past 16 years, the Air Force has been making steady progress cleaning up individual sites and restoring groundwater zones basewide. Environmental restoration and site cleanup will continue until all IRP sites and zones identified meet acceptable environmental conditions and cleanup is accomplished.

CERTIFICATES OF APPRECIATION – Dave Hertzog (right), King Salmon Remedial Project Manager, presents a Restoration Advisory Board (RAB) certificate of appreciation to Willy Foster, King Salmon Community co-chair. Also receiving RAB certificates of appreciation during the September 2002 RAB meeting were community members Richard Sherman, RAB community co-chair, Donald Nielsen, Eddie Clark, Ralph Angasan, Arne Erickson, Linda Levshakoff, Norman Anderson, John Savo, Raymond "Smokey" Taylor, and Gretchen Pikul (ADEC). (Photo by Steve Wilhelmi)

Remedial Optimization Program

The Air Force has implemented its Remedial Process Optimization (RPO) program for IRP sites at Air Force installations. The RPO program, started in 2001 at KSAS, enlists nation-wide third-party experts to evaluate remediation strategies and identify ways to increase efficiencies, make improvements, and accelerate cleanup. This program at program at King Salmon has been nationally recognized by the Air Force as a model of success for improving cleanup efforts, and has been recommended for cleanup programs at other Air Force installations nationwide.

The RPO team performs value engineering and optimization of remedial systems throughout the United States. The RPO team visited King Salmon in July 2002, along with the Alaska Department of Environmental Conservation (ADEC), Environmental Protection Agency (EPA), and Air Force representatives, to meet and discuss remedial optimization issues. Since then numerous restoration strategy recommendations have been identified for King Salmon, many of which are already being implemented. The RPO team is continuing to guide and improve cleanup strategies that will result in even more efficient and effective cleanup in the future.

KING SALMON RAB MEETING - One of the steadfast hallmarks of the King Salmon Restoration Advisory Board (RAB) is strong community interest in the environmental cleanup of King Salmon. RAB members who attended the October 15, 2002, RAB meeting were Left to Right seated at table): Smokey Taylor, Eddie Clark, Gretchen Pikul (ADEC), Nanci Morris, Linda Levashakoff, Willy Foster - RAB community co-chair, Richard Sherman - RAB community co-chair, Dave Hertzog - Air Force remedial project manager and RAB military co-chair, and Max Schwenne, contractor. A RAB appreciation dinner was held prior to the RAB meeting. (Photo by Steve Wilhelmi)

Technologies at work

Two types of remediation systems are currently operating at several King Salmon locations on a long-term basis to reduce site contamination. The Eskimo Creek Treatment System is operating at the Main Base Area (Zone 1) to remove fuel product from on top of the water table at two groundwater seep locations along Eskimo Creek. Six biovent systems are in place at former Underground Storage Tank (UST) removal sites.

Groundwater Cleanup Zones 2 and 4

Monitored Natural Attenuation (MNA) is the strategy approved by ADEC to cleanup contaminated groundwater at Zone 2 (Base Industrial Area) and Zone 4 (Naknek River Storage Area). The MNA approach uses natural processes in the environment to breakdown and remove groundwater contaminants. Attenuation processes include biological degradation, hydrolysis, and dilution process, which breakdown and degrade contaminants in the environmental over time. Regular monitoring measures these reduction rates to verify that declining contaminant levels will meet established cleanup goals within a specified period of time set by ADEC. Acceptable attenuation rates are confirmed at the five-year review.

Before MNA can be implemented under the IRP, the approach must be reviewed and approved by ADEC and documented in a Record of Decision (ROD) signed both by the Air Force and ADEC. The ROD commits the Air Force to a specific remediation approach, cleanup goals, and an acceptable time frame for restoration. MNA requires regular monitoring and a five-year review

continued on page 12 →

King Salmon (continued from page 11)

process with ADEC to verify that acceptable cleanup is progressing as planned.

The MNA approach was selected and recently approved to remediate groundwater contamination at Zone 2 (Base Industrial Area), as documented in a ROD signed in December 2002. Required groundwater monitoring activities will start this summer.

MNA was also approved for Zone 4 groundwater (Naknek River Storage Area) in an April 1999 ROD. Annual monitoring results indicate that natural attenuation is occurring. The ability of natural process to reduce contaminant concentrations to below acceptable levels will be evaluated during the five-year review scheduled for 2004.

North and South Bluffs Monitoring

Following cleanup and closure of the North Bluff and South Bluff Landfills in 1997 and 1998, the Air Force implemented a Post Closure Monitoring Plan for Zone 3 (North and South Bluffs Area) wetlands and groundwater resources. The plan is designed to ensure that buried debris at the landfills is not leaching contaminants into the groundwater, and to comply with applicable regulations.

The monitoring plan included long-term sediment, surface water, and groundwater sampling; and the installation of the South Bluffs Treatment System to protect nearby leachate from the bluffs. The South Bluffs Treatment System is located between the South Bluff landfill and King Salmon Creek, and is designed to capture any potential contaminant releases from the landfill before they could reach the wetlands. To date, no releases have been detected at the treatment system, a trend that is expected to continue into the future.

Long-term monitoring results for environmental sampling indicates that there have not been any adverse environmental impacts from the bluffs sites. Annual sample monitoring will continue in the future at Zone 3, as agreed in an April 2000 ROD. A five-year review is scheduled for 2005 to evaluate the success of landfill closures and protection of nearby wetland habitat.

Zone 1 Groundwater Cleanup Efforts

Bioslurping technology was approved as an interim cleanup action at Zone 1 (ROD dated November 2000) to remove free product floating on the water table. However, results from a recent pilot study indicates that there is not enough free product available on the water table to warrant fuel recovery by this method. Further studies are necessary to identify a more effective removal method.

A GeoprobeTM was used as a means of exploring the distribution of hydrocarbon contaminants in the subsurface. The probe's fluorescence detector is an innovative technology that allows real-time sensing of contaminant levels in the subsurface. Use of this technology allowed a detailed map to be made of the Zone 1 smear zone (the subsurface soils in contact with the fluctuating water table where contaminants in the water table are smeared onto the soil as water levels rise and fall seasonally). Mapping results showed that hydrocarbons are concentrated in this zone at a depth between 28 and 32 feet below the surface at this site.

The Air Force has identified bioventing as a suitable technology to remove residual petroleum contaminants trapped in the smear zone on the basis of recent test results and RPO recommendations. A bioventing pilot study is scheduled for the summer of 2002 to confirm the field effectiveness of this technology under actual site conditions.

Biocell Soil Treatment and Reuse

Since 1997, more than 7000 cubic yards of petroleum-contaminated soils, which have been removed from various sites basewide as part of removal and cleanup actions, have been effectively remediated in specially prepared biocells. Remediated soils have been subsequently used for other purposes once sampling and confirmed soil cleanup and ADEC has provided the necessary approvals. Remediated soils have been used at other King Salmon sites as landfill capping material and excavation backfill material. Soil bioremediation and reuse has reduced disposal costs for contaminated soils.

Future studies, remedies will address indoor air problem at Galena Aviation Vocational Technical Center

Indoor air quality in the Galena Aviation Vocational Technical Center (GAVTC) has been affected by past industrial activities in and around the building, and subsurface migration of petroleum contamination from the former Saddle Tank Area at Galena Airport. Fuel-related contaminants (benzene) have been detected in indoor air samples.

The results of air samples collected in the GAVTC indicate no immediate risk to students and teachers, according to the Alaska Department of Health and Social Services (DHSS). The sampling was conducted by the Air Force in August and September 2002.

These air sampling results were evaluated by health professionals and representatives of federal and state agencies: Air Force's health professionals (the Air Force Institute for Environment, Safety and Occupational Health Risk Analysis, its consultants, and 611th Air Support Group officials), the Alaska Department of Environmental Conservation (ADEC), and DHSS. In addition, the Louden Tribal Council (LTC), Galena City School, and the City of Galena have been informed of the sampling results.

continued on p age 14 →

Galena Aviation Vocational Training Center

Summa canister and 12-hour regulators that were used to measure air quality in the GAVTC.

Air quality of the building is still a concern for people who will be in the building over multiple years. Additional air sampling studies are being implemented to get a clearer picture of what exposure is likely in the long term. For example, more study can help determine if contaminant concentrations will decrease over time, and specific sampling will be done in the places where teachers and students spend their time. Future engineering remedies are also being evaluated for the GAVTC to help decrease the contaminant concentrations.

BACKGROUND

During the period of 1970-1997, the GAVTC facility was used as a hangar by a local flying service. In the mid-1990s, indoor air quality concerns were identified. The Air Force constructed and used a fuel vapor vacuum system to minimize the potential for indoor air hazards. A disagreement over rental terms caused the flying service to vacate the building in 1997. Since the building was unoccupied the Air Force stopped the ventilation measures. The building was purchased by the City of Galena in 2000. The Galena School District obtained funding to convert the building into a vocational school. These renovation activities were implemented in 2001-2002. The GAVTC opened in September 2002.

A Remedial Process Optimization (RPO) study was conducted by the Air Force in June 2002. This study included experts in remediation at contaminated sites and certified occupational health professionals. Participants included ADEC, LTC, and the Air Force. During the study the Tribal Council indicated that students would soon occupy the building. The RPO team recommended that the Galena City School be notified of past indoor air concerns. The team also recommended that additional indoor air sampling be conducted, and appropriate follow-on actions be taken.

In August 2002, a system was installed beneath the GAVTC to minimize vapors from the underlying fuel plume moving into the building. Yukanna Development Corporation personnel were trained to operate, maintain, and monitor the system. The system is currently operational.

Indoor air quality samples were collected in August and September 2002 at multiple locations in the building. The samples indicated presence of fuel-related contamination. These results were submitted to all agencies for their evaluation.

CONTINUING ACTIONS

Specific focus continues to be placed on protection of the students and teachers at the GAVTC.

The Air Force and all agencies involved will continue to identify and implement protective measures at the GAVTC including:

- Collection of additional air sampling data;
- Continued operation of system to minimize vapors entering the building;
- Evaluation of modifications to the building include sealing the floors and walls, and installation of a heating, ventilation, and air conditioning system; and
- Long-term remediation plans for the Saddle Tank area.

As additional air sampling data and building modifications are evaluated, the Air Force will work in close coordination with all agencies involved and the citizens of Galena.

CLEAN SWEEP - AN INNOVATIVE PROGRAM

By Larry Opperman
Clean Sweep Project Manager

It took a bit of convincing at Pacific Air Force Command (PACAF), but it certainly was an idea whose time had come. Sprinkled throughout rural Alaska, there are numerous abandoned or minimally manned radar installations under the domain of the 611th Civil Engineer Squadron (CES). Once serving as part of the Distant Early Warning Line, or DEWline, and early warning defense system known as White Alice Communications, the installations were highly regarded during the Cold War. But technology has made many of these sites obsolete and time has taken its toll. The once specialized system now stands as a series of dilapidated structures, relics of a bygone era.

In response to community concerns and to reduce Air Force environmental and financial liability, the 611 CES unveiled a unique plan to both demolish old facilities and cleanup environmental contamination at 28 installations across Alaska. The proactive new program "Clean Sweep" was conceived in the spring of 1996. Clean Sweep currently affects 28 geographically separate installations. Approved on October 10, 1997, by the Deputy Under Secretary of Defense and Deputy Assistant Secretary of the Air Force, Clean Sweep is the only Air Force program of it's kind in the nation.

Previously, it was USAF policy that environmental remediation and facility demolition had to be done using different and distinct funding sources. Personnel and equipment could not be shared. Environmental contamination had to be cleaned up using Environmental Restoration Account (ERA) funding in a rigorous priority order based on Relative Risk scoring. Facility demolition, on the other hand, occurred whenever scarce Operation and Maintenance (O&M) funding was available. In most cases, this meant mobilization to the same site took place multiple times. In remote Alaska, mobilization is often the most expensive portion of a project. This has now changed. Both facility demolition and environmental remediation can now be funded by ERA. Both types of work are concurrently, under a single contract. When the contract is complete, the site is clean of debris, dilapidated structures, and environmental hazards. Due to the harsh climate and short field seasons in Alaska, Clean Sweep doesn't necessarily guarantee all the work will be done in one mobilization, however, it does significantly reduce overall mobilization cost.

Typical abandoned Air Force radar site building condition after vandalism and/or pilferage.

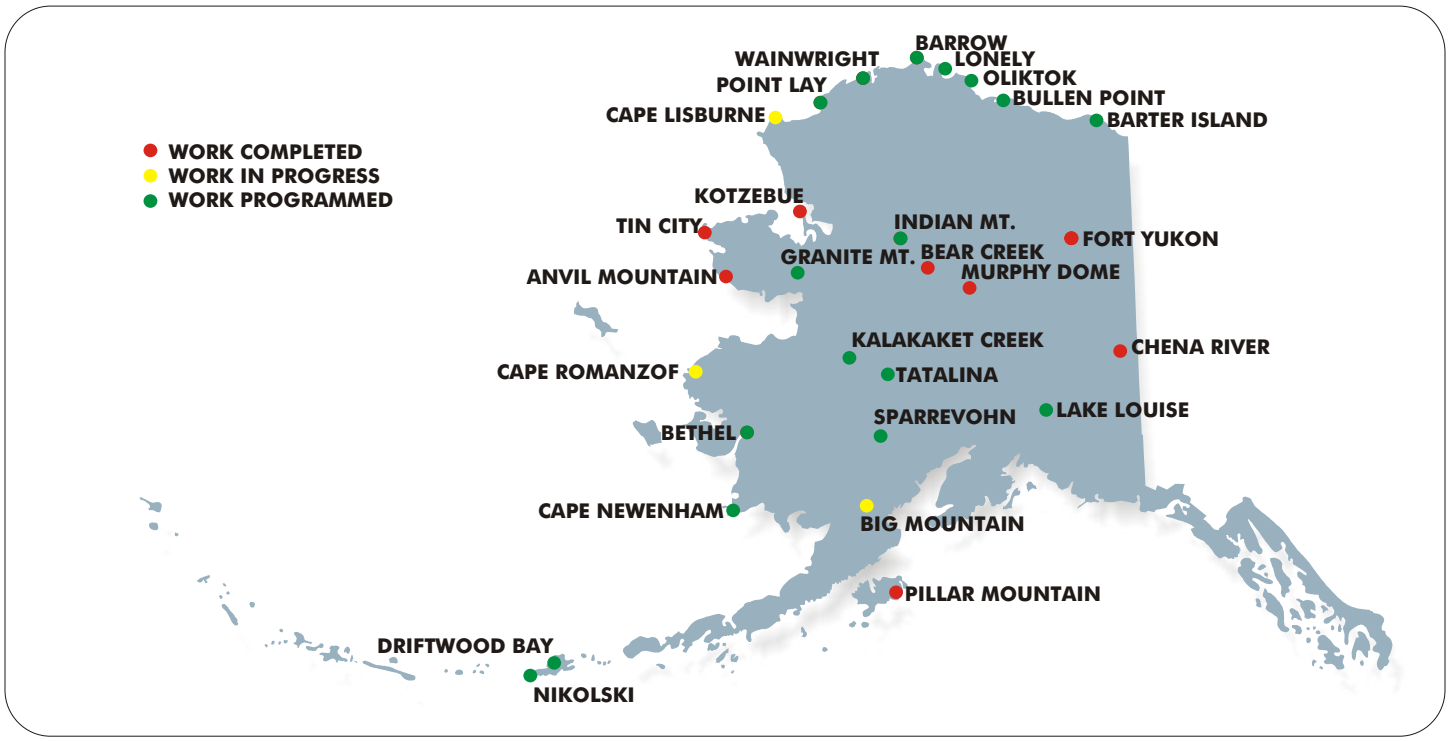
Under current DoD and Air Force policy, ERA funds can only be used for environmental releases occurring prior to January of 1984. The original legislation authorizing the Defense Environmental Restoration Program (DERP) included environmental remediation and building demolition/debris removal (BD/DR) as ERA eligible activities. However, DoD placed a moratorium on use of ERA funds for BD/DR in approximately 1989. Since, then Clean Sweep is one of the few programs to receive a waiver from DoD to allow use of ERA funds for BD/DR. The waiver was issued in recognition of the unique and serious

continued on page 16 →

hazards posed by abandoned, dilapidated structures left by the Air Force in Alaska.

Logistics and mobilization in Alaska is a huge challenge. Imagine being a project manager working in St. Louis with the task of demolishing 25,000 square feet of buildings, cleanup a 1968 PCB spill, and a 35 year old landfill in Denver. Now throw in the fact that you can't drive to Denver and the highest mountain range on the North American continent is between you and your site.

program demolition was being duplicated on each site. A project to perform environmental surveys in support of building demolition and debris removal (BD/DR) was initiated in 2000. Clean Sweep environmental surveys were conducted at 18 remote radar installations throughout Alaska in 2000 and 2001. The survey goal was to evaluate and plan demolition logistics, quantify regulated wastes affecting demolition, accurately scope demolition, scope the planning and permitting efforts, and estimate demolition costs. With



Also, there are no excavators, bulldozers, or heavy equipment of any kind available locally. There is an added wrinkle. There's no lodging, field season is around two to three months, and you are not at the top of the food chain. That's right, polar bears! Whatever plan you come up with, one thing is certain, it will cost a lot of money.

The technology was obviously in place to construct these sites, and now the Air Force is working on tearing them down. As of 2003, eight sites in Alaska have been demolished, two are in progress, and 18 remain. A map of Alaska showing the location and status of each site is shown above. It soon became apparent the level of effort to

most of the sites being universal in construction, it made sense to standardize demolition scope and planning.

A contractor surveyed each of the 18 sites and a site-specific demolition plan was developed. The only difference in the level of effort for each site was the total number of buildings requiring demolition. Each site was surveyed for construction and demolition (C&D) debris, recyclable material, regulated asbestos containing material (RACM), polychlorinated biphenyls (PCB), and concrete waste. Composite samples of C&D debris were tested for leachable lead based paint to ensure none of the waste required disposal

under the Resource Conservation and Recovery Act (RCRA) hazardous waste regulations. No facilities tested over the 5 mg/l RCRA limit for leachable lead. The Clean Sweep surveys determined the following volumes of waste requiring disposal for the remaining 18 sites.

· 402 Facilities
· 45.7 Million Pounds of C&D Debris
· 7.1 Million Pounds of Recyclable Material
· 6.3 Million Pounds of Concrete
· 884,090 Pounds of PCB remediation Waste
· 359,318 Pounds of RACM

One obvious challenge involves waste disposal. Many sites are unsuitable for on-site disposal due to permafrost, and waste must be shipped off-site to a permitted landfill somewhere else in Alaska, or in the Pacific Northwest. Many of the Alaska bush communities could potentially accept the waste into their local landfills, but the volumes are so great they would lose many years of usable life to their landfills. In one community, it was estimated they would lose 13 years usable space from their landfill, out of only 20 years total usable space left. Therefore, shipping off site is most often the best solution. The one anomaly is the concrete waste. In Alaska, uncontaminated concrete is not considered solid waste and can be buried on site without a permit.

Now that the Air Force is getting the facilities demolished, what about the environmentally contaminated sites? There are approximately 400 CERCLA, or Installation Restoration Program (IRP) sites, at Air Force controlled facilities throughout remote Alaska. The three main components of these IRP sites are fuel, solvents, and landfills. In many instances, the fuel and solvent releases occurred under buildings and cannot be fully investigated or remediated until the building is removed. Part of Clean Sweep is to ensure this process can take place on the same contract. The difficulty arises when there is a delay of any kind in the CERCLA process prior to getting the project in the field. The CERCLA process is cumbersome, lengthy, and often riddled with unexpected delays. It is up to the project manager to ensure formal Decision Documents, signed by the State Regulator and Air Force officials, are in place prior to finalizing the scope of each Clean Sweep project. This is integral to success in the program concept .

While delays have occurred in the past, the program is currently progressing on schedule. Project managers are learning from some past mistakes and are aiming to improve the efficiency, both logistically and economically. What was once approved as a $75 million dollar program has increased to an estimated $123.5 million cost-to-complete. Most of this increase resulted from completion of the Clean Sweep Survey reports in 2001, which provided better details of building square footage, asbestos and other waste, disposal options, and overall cost estimates. It is envisioned this cost may escalate further due to inflation, previously unknown contaminated sites, or other changes in logistics considerations.

The Clean Sweep program makes sense for remote sites in Alaska. It is achieving the goals of eliminating liability, cleaning up the environment, and transferring excess property in the most cost effective manner possible.

CLEAN SWEEP SCHEDULE

SITE	START/FINISH
Cape Lisburne	2001-2004
Big Mountain	2002-2004
Cape Romanzof	2003
Point Lay	2004-2006
Barter Island	2005-2006
Indian Mountain	2007-2008
Nikolski	2007-2008
Oliktok	2007-2008
Point Barrow	2008-2009
Bullen Point	2008-2009
Tatalina	2008-2009
Wainwright	2008-2009
Driftwood Bay	2010-2011
Kalakaket Creek	2010-2011
Point Lonely	2010-2011
Lake Louise	2010-2011
Bethel	2011-2012
Cape Newenham	2011-2012
Granite Mountain	2011-2012
Sparrevohn	2011-2012

CAPE LISBURNE - Phase 2 Building Demolition Complete

By Stan Slagle

The 611 CES contractor, Tikigaq Inc, completed the phase 2 building demolition portion of Clean Sweep at Cape Lisburne Long Range Radar Site (LRRS) in FY02. Tikigaq is an Alaska Native-owned, 8(a) village corporation based in the village of Point Hope, located approximately 35 miles southwest of Cape Lisburne LRRS.

This project represents a successful execution of a major Clean Sweep project using local hire. Contracting with Tikigaq Inc is providing major employment opportunities for Pt Hope residents. Having local residents work on the project fosters trust, understanding, and satisfaction among community and tribal members that the project is being done properly, and cleanup goals are being met.

The Pt Hope Restoration Advisory Board (RAB) played an integral part in establishing priorities, and cleanup goals that are now being implemented. In addition, the Environmental Restoration Program has provided a conduit of communication to resolve a number of other concerns, and issues voiced by Pt Hope residents. Among these is possible future resettlement of a former Inupiat village at Cape Lisburne LRRS from which residents were forced to leave, and homes destroyed, during facility construction in the 1950s. Other spin-off benefits of the RAB included cultural and archeological survey of the old village, village elder's visit to the old village site to assist in locating old home sites and graves, facilitated natural resource inventory work, wildlife surveys in adjacent Alaska Maritime National Wildlife Refuge, and coordination with other federal and state agencies to address other issues. The 611 CES Environmental Restoration Program has successfully fostered a friendly, trustful, and productive relationship with the Inupiat people of Pt Hope despite a troubled past; a true success story.

NOME TANK FARM UPDATE

PIPELINE REMOVAL --- Larry Pellegrino of the 611th Civil Engineer Squadron (CES) Environmental Operations Section, cuts an abandoned fuel pipeline near the Nome Tank Farm. Erosion on the banks of the Snake River in 2002 exposed the pipeline on both sides of the river creating a safety hazard. The City of Nome contacted the 611 CES and requested that the pipeline be removed. Doug Wootten, remedial project manager for the Nome Tank Farm, initiated a time critical removal action and within three weeks the pipeline was removed. (Photo by Lloyd Ward)

BETHEL PUBLIC MEETING --- The 611th Civil Engineer Squadron (CES) conducted a public meeting in Bethel April 9, to discuss an Explanation of Significant Difference and 30-day comment period. Larry Underbakke (right), 611 CES remedial project manager, explained the change in the selected environmental cleanup remedy to achieve State of Alaska soil cleanup levels at the Bethel Radio Relay Site. (Photo by Steve Wilhelmi)

GOVERNMENT-TO-GOVERNMENT MEETING --- Federal and state representatives met in an official capacity with tribal and community leaders April 30 in Port Heiden to discuss environmental cleanup of the White Alice Communications Site. Following Department of Defense Tribal Policy Air Force representatives conducted government-to-government consultation with tribal leaders. Attending the meeting were (Left to Right): Larry Underbakke, Air Forcæ remedial project manager; John Halverson, Department of Environmental Conservation; Scott Anderson, Tribal Environmental Coordinator; Delores Anderson, Tribal Chief Native Village of Port Heiden; Laura Christensen, Lynn Carlson, and Annie Christensen. A public meeting was also held in Port Heiden on April 29. (Photo by Steve Wilhelmi)

BALEEN PRESENTATION – Johnny Brower (left), Barrow RAB member, presents baleen to Roger Lucio, community relations coordinators with the 611th Civil Engineer Squadron. The Barrow RAB presented the baleen to the Air Force in January 2003 in recognition for its proactive environmental cleanup efforts on the North Slope. Artist renderings representative of the North Slope region were also etched on the baleen. (Photo by Stan Slagle)

CLEAN GREEN ALASKA

A CLEAN ENVIRONMENT –

611th Civil Engineer Squadron's "Clean Green Alaska' Student Environmental Education Program continues to grow in popularity. Steve Wilhelmi, Environmental Community Relations Coordinator, conducted two highly interactive programs with students in Bethel on April 10, 2003. Since the programs inception there have been 17 presentations for nearly 700 students.

Installation Restoration Program (IRP)

Alaska has played a strategic role in national defense for over 130 years. A strong military presence was established during World War II, with substantial military resources maintained throughout the Korean War, the War in Vietnam, and the Cold War. Since then, activities at many installations have been reduced or eliminated. To address conditions created by past military events and practices, the U.S. Department of Defense (DoD) created the Installation Restoration Program or "IRP".

OVERVIEW:

With growing awareness of the long-term effects of hazardous materials on the environment the DoD developed the IRP in the 1980s to address conditions at military installations around the country. The IRP includes identification, evaluation, and remediation of former disposal and spill sites at DoD facilities. Most IRP activities are conducted according to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), also known as the Superfund Act.

The Air Force IRP policy is to "remediate all sites that pose a threat to human health, safety, and the environment, regardless of whether they are included on the [Superfund] National Priorities List (NPL)". The objectives addressing this policy include:

- Identifying sites and Areas of Concern
- Investigating threats
- Cleaning up sites
- Closing out IRP sites

To achieve the IRP objectives, the Air Force evaluates remedial response alternatives based on the following nine criteria:

1. Protection of human health and the environment: How well does the cleanup alternative protect human health and the environment through elimination, reduction, or control of contaminated areas?

2. Compliance with applicable or relevant and appropriate requirements (ARARs): Does the alternative meet cleanup standards and comply with applicable government laws and regulations?

3. Reduction of toxicity, mobility, or volume: Does the alternative effectively treat the contamination to significantly reduce the toxicity, mobility, and volume of the hazardous substances?

4. Short-term effectiveness: Does the alternative mitigate potential adverse effects to either human health or the environment during construction or implementation?

5. Long-term effectiveness and permanence: How well does the alternative protect human health and the environment after cleanup, and are there any risks remaining at the site?

6. State acceptance: Is the alternative acceptable to associated state agencies?

7. Community acceptance: Is the alternative acceptable to community members?

8. Implementability: Is the alternative both technically and administratively feasible?

9. Cost: What are the capital and operating and maintenance costs of the alternative?

The ultimate goals of the Air Force are completing site cleanup and site closeout.

STAGES IN THE IRP PROCESS

A standard, staged process is applied at all IRP sites, as depicted below.

1.	Preliminary Assessment/ Site Inspection (PA/SI):	Conducting a record search, interviews, and site visits; and collecting samples to confirm the presence or absence of contamination.
2.	Scoping Planning:	Scoping work for remedial investigation, cost estimating, and writing work plans.
3.	Remedial Investigation/ Feasibility Study (RI/FS):	Performing sampling, analysis, and risk assessment activities; and developing cleanup alternatives and remedial action(s).
4.	Proposed Plan:	Discussing remedial actions, and recommending remedial action.

The RI/FS and Proposed Plan are made publicly available, with a minimum 30-day public comment period followed by a Public Meeting.

5.	Decision Document	Presenting responses to public comments on Proposed Plan, and describing remedial action selected.
6.	Remedial Design/ Remedial Action:	Developing remedial engineering specifications, and implementing construction of cleanup solution(s).
7.	Post Remediation Controls:	Monitoring cleanup operations, and measuring effectiveness of cleanup solution(s) over time.

Ongoing community relations include Community Relations Plan and updates, Restoration Advisory Board (RAB) meetings, workshops, training, fact sheets, public notices, reports, and presentations, with an information repository for all materials.

RESTORATION ADVISORY BOARDS

What is a Restoration Advisory Board (RAB)?

A RAB brings together people who reflect the diverse interests of the local community, enabling the early and continued flow of information between the community, DoD, and environmental oversight agencies. The DoD created RABs to ensure that all stakeholders have a voice and can actively participate in the review of documents. RAB community members provide advice as individuals to the decision-makers on restoration issues. It is a forum to be used for the expression and careful consideration of diverse points of view. The RAB complements other community involvement efforts, but does not replace them. The Air Force will continue to be responsible for fulfilling all public involvement requirements.

Who is on a RAB?

A RAB is composed of community members, and representatives from the Air Force Installation and Federal, State and local governments.
RAB members should represent the diverse interests within the community, including both supporters and critics to generate broad input from all interested parties.
A RAB may contain up to 20 members in order to reflect community diversity, yet still remain workable.

A RAB is co-chaired by both a military representative and a community representative.

How does a RAB work?

A RAB serves as a forum for discussion and exchange of information between the community, the Air Force, and Federal, State and local agencies regarding the cleanup program at an Air Force installation.

A RAB provides an opportunity for stakeholders to review the restoration cleanup progress, provide input, and participate in dialogue with decision-makers.

A RAB complements – but does not replace - other community involvement initiatives.

RAB BUSINESS - Wainwright Restoration Advisory Board (RAB) community co-chair Raymond Aguvluk conducts a 2003 RAB meeting. Aguvluk served as the Wainwright RAB community co-chair for several years until July 2003. The community is in the process of selecting a new RAB community co-chair.

The RAB provides advice to the Air Force and to environmental oversight agencies on the cleanup program. Specific responsibilities include: addressing issues such as cleanup goals; reviewing plans and documents; identifying proposed requirements and priorities; conducting regular meetings. RAB meetings are always open to the public.

Who can be a RAB member?

Native Alaskan
Local government officials/agencies
School Districts
Local environmental groups
Regulatory agencies
Medical community
Anyone
Tribal members/representatives
Community members
Installation employees/residents
Civic/public interest organization
Local homeowner organizations
Business community

RESPONSIBILITIES OF A RAB MEMBER

1. Actively participate in meetings.
2. Provide advice and comment on restoration issues.
3. Represent and communicate community interests and concerns to the RAB.
4. Act as a conduit for the exchange of information between the community, Air Force and environmental oversight agencies regarding the IRP.
5. Review, evaluate, and comment on documents and other such materials related to installation restoration.
6. Membership in a RAB is voluntary and members are not financially compensated.

RESPONSIBILITIES OF THE AIR FORCE AND COMMUNITY CO-CHAIR

1. Coordinate with each other to prepare and distribute an agenda prior to each RAB meeting.
2. Ensure that everyone participates in an open and constructive manner.
3. Attend all meetings and ensure that the RAB is actively participating in the restoration decision process.
4. Ensure that community issues related to restoration are addressed.
5. Ensure documents distributed to the RAB are also made available to the general public.
6. With assistance from the RAB, maintain an accurate list of interested/affected parties.
7. Provide relevant policies and guidance documents to the RAB in order to enhance the RAB's operation.
8. Ensure adequate administrative support to the RAB is provided.

QUESTIONS AND COMMENTS

To find out more about RABs and how to become a member, contact the Air Force Community Relations Office at:

(800) 222-4137 (Toll Free)
(907)552-4506 (Roger Lucio) or (907) 552-8166 (Steve Wilhelmi)
Or write to:
Community Relations Coordinator
611th Air Support Group
611th Civil EngineerSquadron
10471 20th Street, Suite 302
Elmendorf AFB, AK 99506-2200

AIR FORCE PROVIDES ENVIRONMENTAL TOLL FREE LINE FOR RURAL ALASKA

Rural Alaska residents interested in Air Force environmental investigations and cleanup activities near their communities may now call toll free for information. The environmental hotline is part of a continuing Air Force effort to increase public participation and awareness. Air Force established the toll free line to ensure rural citizens can be kept informed with a simple phone call.

Many resident have expressed concerns about the cleanup of various Air Force radar installations. Rural communities near these installations include: Barrow, Bethel, Buckland, Chevak, Cold Bay, Fort Yukon, Hughes, Hooper Bay, Iguigig, Iliamna, Kaktovik, King Salmon, Kotzebue, Koyuk, New Halen, Nuiqsut, Point Hope, Point Lay, Scammon Bay, Tanana, and Wainwright,

The Air Force invites residents to call the environmental hotline at 1-800-222-4137, between 7:00 a.m. and 5:00 p.m., Monday through Friday. After-hour and weekend callers may leave voice mail messages. Calls will be returned the following business day. Callers should feel free to ask site-specific questions and may also inquire about receiving Air Force community relations publications, and assistance regarding RABs and public meetings.

PROJECT MANAGERS

The 611th Civil Engineer Squadron (CES) Environmental Restoration Section has 41 installations in various stages of cleanup. The listing below shows the names of the remedial project managers, telephone numbers and sites assigned. The project managers can also be reached toll free at 1-800-222-4137.

Cape Newenham
Cape Romanzof
Tin City

Keith Barnack ***552-5160***

Campion
Galena
Kalakaket
King Salmon
Naknek 1
Naknek 2

Dave Hertzog ***552-7261***

Pillar Mountain
Port Moller
Barter Island
Bullen Point

David Longtin ***552-7193***

Clean Sweep Program
Eareckson AS
Point Lay
Wainwright

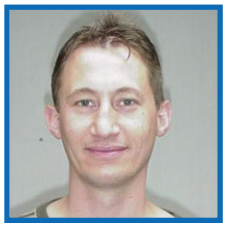
Larry Opperman ***552-7697***

Bear Creek
Beaver Creek
Big Mountain
Duncan Canal
Kotzebue

Mike Rhoads ***552-4490***

Barrow
Cape Lisburne
Lake Louise
Oliktok
Point Lonely

Stan Slagle ***552-4489***

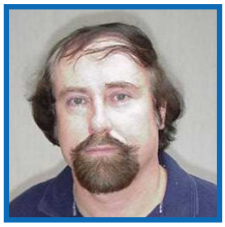


Cold Bay
Fort Yukon
Murphy Dome
Nikolski
Sparrevohn

Scott Tarbox ***552-7303***

Bethel
Driftwood Bay
Granite Mountain
Port Heiden

Larry Underbakke ***552-7854***



Anvil Mountain
Indian Mountain
Nome Tank Farm
North River
Tatalina

Doug Wootten ***552-7439***